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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/797,520

Applicant(s)

WING, DANIEL G.

Examiner

KAN YUEN

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-56 have been considered but are moot in view of the new ground(s) of rejection.

Allowance Withdrawn

3. The allowable subject matter for claim 46 indicated in previous office action has been withdrawal.

Claim Rejections - 35 USC § 103

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 10, 11, 12, 16-18, 21, 23, 30, 32, 42, 43, 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065).

For claim 1, Farrell et al. disclosed the method of varying a Time To Live (TTL) value in a trace packet sent from a source and addressed to a destination endpoint to intentionally cause an intermediate node other than the destination endpoint in the packet switched network to send back to the source a packet expiration notice indicating expiration of the TTL value (Farrell et al. see paragraphs 0017, 0018, 0020, 0021, and fig. 1). Inside an IP packet, a transport layer packet is used with the source and destination port set to the actual application port numbers for the application to be monitored. A first application packet in a sequence of application packets is transmitted from the source node 102 to a first intermediate node 106(A). The application or trace packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. Thus, when TTL=0 that indicates the expiration of the TTL value.

However, Farrell et al. did not disclose the teaching of receiving an intermediate node time value determined by the intermediate node in the packet expiration notice indicating when the intermediate node received the trace packet.

Shin et al. from the same or similar fields of endeavor teaches receiving an intermediate node time value determined by the intermediate node in the packet expiration notice indicating when the intermediate node received the trace packet (Shin et al. paragraph 0089-0091, fig. 8B). A time stamp field 850 contains time information concerning when the OAM/2 BHP was sent and received.

Thus, it would have been obvious to implement the time stamp field 850 in the error message as taught by Farrell et al. The motivation for using the teaching of Shin et al. in the network of Farrell et al. being that it specifying the type and scope of and necessary details for carrying out an OAM operation without ambiguity.

Regarding claim 3, Farrell et al. disclosed setting a first TTL value in a first trace packet causing a first intermediate node to send back a first packet expiration notice with a first time value associated with a one-way packet delay to the first intermediate node; and

setting a second larger TTL value in a second trace packet causing a second intermediate node other than the destination endpoint to send back a second packet expiration notice with a second time value associated with a one-way packet delay to the second intermediate node (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1).

The second large TTL is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers.

Claim 10 is rejected similar to claim 1.

Regarding claim 11, Farrell et al. disclosed the processor is enabled to specify a Time To Live (TTL) value in the packet insufficient to reach the destination endpoint, and causing the intermediary node to send back the message when the TTL value is decremented to zero (Farrell et al. see paragraph 0021, lines 1-10, and fig. 1).

Regarding claim 12, Farrell et al. disclosed the processor modifies the TTL values in multiple packets causing multiple different intermediate nodes in a network to send back messages each containing a respective intermediate node timestamp values when the TTL values in the packets are decremented to zero by that intermediate node (Farrell et al. see paragraph 0021, lines 1-10, and fig. 1). The source node 102 or the processor configured to modified TTL value to be 2 for the second packet.

Regarding claim 16, Farrell et al. disclosed a processor configured to receive a trace packet containing an expiration value causing the processor to discard the trace packet and generate an expiration message (Farrell et al. see paragraphs 0025-0027 and fig. 1 and 2). The processor or an intermediate node 106 is configured to receive an application packet or trace packet from a source node 102. If node 106 detects expiration or error in the packet, it will generate an ICMP response error message back to source 102. The error corresponds to the TTL value had expired in transit. Although the reference does not teach discarding the application packet after the node 106 detects expiration or error in the packet, however it is obvious to the person of ordinary

skill in the art at the time of the invention to drop the packet after the node detected expiration.

However, Farrell et al. did not disclose the teaching of generate an expiration message that identifies a time value associated with when the trace packet was received by the processor.

Shin et al. from the same or similar fields of endeavor disclosed the teaching of generate an expiration message that identifies a time value associated with when the trace packet was received by the processor (Shin et al. paragraph 0089-0091, fig. 8B). A time stamp field 850 contains time information concerning when the OAM/2 BHP was sent and received.

Thus, it would have been obvious to implement the time stamp field 850 in the error message as taught by Farrell et al. The motivation for using the teaching of Shin et al. in the network of Farrell et al. being that it specifying the type and scope of and necessary details for carrying out an OAM operation without ambiguity.

Regarding claim 17, Farrell et al. disclosed the network processing device is located at an intermediate location in a network between a source endpoint sending the trace packet and a destination endpoint for the trace packet (Farrell et al. see paragraph 0027, lines 1-17, and fig. 1 and 2). The network-processing device is the intermediate node 106.

Regarding claim 18, Farrell et al. disclosed the processor is configured to decrement the expiration value and forward the trace packet toward the destination endpoint when the decremented expiration value is not zero, the processor further

configured to discard the trace packet and send the expiration message back to the source endpoint when the expiration Value is decremented to zero (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1). The second large TTL or expiration value is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers. The second application packet is return to the source when the TTL value is 0.

Claim 21 is rejected similar to claim 1.

Regarding claim 23, Farrell et al. disclosed the means for setting a first TTL value in a first trace packet causing a first intermediate node to send back a first packet expiration notice with a first time value associated with a one-way packet delay to the first intermediate node; and

means for setting a second larger TTL value in a second trace packet causing a second intermediate node other than the destination endpoint to send back a second packet expiration notice with a second time value associated with a one-way packet delay to the second intermediate node (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1). The second large TTL is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers.

Claim 30 is rejected similar to claim 1.

Regarding claim 32, Farrell et al. disclosed setting a first TTL value in a first trace packet causing a first intermediate node to send back a first packet expiration

notice with a first time value associated with a one-way packet delay to the first intermediate node; and

setting a second larger TTL value in a second trace packet causing a second intermediate node other than the destination endpoint to send back a second packet expiration notice with a second time value associated with a one-way packet delay to the second intermediate node (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1). The second large TTL is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers.

Regarding claim 42, Farrell et al. disclosed formatting a trace packet for transferring on a path that extends from an origination endpoint, through at least one intermediary node in the packet switched network, to a destination endpoint that is different than the intermediary node, said formatting including addressing the trace packet with a destination address that corresponds to the destination endpoint (Farrell et al. see paragraphs 0017, 0018, 0020, 0021, and fig. 1). Inside an IP packet, a transport layer packet is used with the source and destination port set to the actual application port numbers for the application to be monitored. The source transmits data to a destination node 104 over a route of nodes 106. The application or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102;

selecting a Time To Live (TTL) value for the trace packet, the selected TTL value to intentionally cause the intermediate node to send back to the origination endpoint a

packet expiration notice (paragraphs 0020-0021). The system is able to select the TTL value to be 1 or 2. The application packet is injected with TTL values, and transmit the packet to a intermediate node 106A. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102;and

receiving the packet expiration notice (paragraph 0020). An error message is generated when an expired packet is received by the source.

However, Farrell et al. did not teach extracting an intermediate node time value from the packet expiration notice, the intermediate node time value inserted by the intermediate node in the packet expiration notice and indicating when the intermediate node, not the destination node, received the trace packet.

Shin et al. from the same or similar fields of endeavor teaches the method of extracting an intermediate node time value from the packet expiration notice, the intermediate node time value inserted by the intermediate node in the packet expiration notice and indicating when the intermediate node, not the destination node, received the trace packet (Shin et al. paragraph 0089-0091, fig. 8B). A time stamp field 850 contains time information concerning when the OAM/2 BHP was sent and received.

Thus, it would have been obvious to implement the time stamp field 850 in the error message as taught by Farrell et al. The motivation for using the teaching of Shin et al. in the network of Farrell et al. being that it specifying the type and scope of and necessary details for carrying out an OAM operation without ambiguity.

Regarding claim 43, Farrell et al. disclosed intermediate node time value is used, at least in part, to determine one-way packet delay from the source endpoint to the intermediate node (Farrell et al. see paragraph 0025-0027 and fig. 1 and 2).

Regarding claims 50-53, Farrell et al. disclosed at a time the trace packet is sent, existence of the destination endpoint on a path for the trace packet is known by the source while existence of the intermediate node on the path is not known by the source, such that the source receives back a communication indicating a time that a previously unknown node received the trace packet (Farrell et al. paragraph 0021). A second application packet is transmitted from source with TTL=2. The first node receives the packet and decrement the TTL, and the second node receives the packet and decrement the TTL. At this point according to the simplified example, the first two nodes in the application route are known. Thus, before the source sends out the application packet, the intermediates nodes are not known.

Claim 54 is rejected similar to claim 16.

7. Claims, 2,7-9,13-15,20,22,27-29,31,36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), as applied to claim 1 above, and further in view of Adhikari et al. (Pub No.: 2004/0252646).

For claim 2, Farrell et al. and Shin et al. both did not disclose the teaching of sending a source time value in the trace packet indicating when the trace packet was sent and receiving both the source time value and the intermediate node time value in the packet expiration notice.

Adhikari et al. from the same or similar fields of endeavor teaches the method of including sending a source time value in the trace packet indicating when the trace packet was sent and receiving both the source time value and the intermediate node time value in the packet expiration notice (see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the teaching as taught by Adhikari et al. in the network of Farrell et al. and Shin et al. The motivation for using the teaching as taught by Adhikari et al. in the network of Farrell et al. and Shin et al. being that it increases the speed of error detection.

Regarding claim 7, Adhikari et al. disclosed the teaching of formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same media path as corresponding RTP payload packets containing media content (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 8, Farrell et al. disclosed the teaching of varying the TTL value and setting a marker bit in the trace packet causing the destination endpoint to send a corresponding Real Time Control Protocol (RTCP) report (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

Regarding claim 9, Adhikari et al. disclosed the teaching of determining whether or not to transmit a media stream according to contents of the RTCP report (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 13, Adhikari et al. disclosed wherein the processor discerns when the packet was sent and compares that time with the intermediate node timestamp value returned in the message to determine the one-way packet delay between the processor and the intermediate node (Adhikari et al. see paragraph 0059, lines 1-7, paragraph 0060-0063, and see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Regarding claim 14, Adhikari et al. disclosed wherein the processor formats the packet as a Real Time Protocol (RTP) payload packet that travels along a same media

path as associated RTP payload packets containing an actual media payload (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 15, Farrell et al. disclosed wherein the processor sets a Time To Live (TTL) value and a marker bit in the packet that causes the destination endpoint to send back a Real Time Control Protocol (RTCP) report (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

Regarding claim 20, Adhikari et al. disclosed wherein the trace packet is formatted as a media payload packet that uses a same media path as associated media packets containing a media payload (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 22, Adhikari et al. disclosed the means for sending a source time value in the trace packet indicating when the trace packet was sent and receiving both the source time value and the intermediate node time value in the packet expiration notice (Adhikari et al. see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Regarding claim 27, Adhikari et al. disclosed the means for formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same media

path as corresponding RTP payload packets containing media content (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 28, Farrell et al. disclosed the means for varying the TTL value and setting a marker bit in the trace packet causing the destination endpoint to send a corresponding Real Time Control Protocol (RTCP) report (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

Regarding claim 29, Adhikari et al. disclosed the means for determining whether or not to transmit a media stream according to contents of the RTCP report (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 31, Adhikari et al. disclosed the teaching of sending a source time value in the trace packet indicating when the trace packet was sent and receiving both the source time value and the intermediate node time value in the packet expiration notice (Adhikari et al. see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Regarding claim 36, Adhikari et al. disclosed formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same media path as

corresponding RTP payload packets containing media content (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 37, Farrell et al. disclosed the varying the TTL value and setting a marker bit in the trace packet causing the destination endpoint to send a corresponding Real Time Control Protocol (RTCP) report (Farrell et al. see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

Regarding claim 38, Adhikari et al. disclosed determining whether or not to transmit a media stream according to contents of the RTCP report (Adhikari et al. see paragraph 0056, lines 1-16).

Regarding claim 39, Adhikari et al. disclosed the trace packet is part of a same media stream as the RTP payload packets (Adhikari et al. see paragraph 0056, lines 1-16).

8. Claims 4, 24, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), as applied to claim 3 above, and further in view of Hefel et al. (Pat No.: 5563875).

For claim 4, Farrell et al. and Shin et al. both did not disclose the teaching of setting incrementally increasing TTL values in additional trace packets until the

destination endpoint sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint.

Hefel from the same or similar fields of endeavor teaches the method of setting incrementally increasing TTL values in additional trace packets until the destination endpoint sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint (see column 6, lines 20-25). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the teaching as taught by Hefel et al. in the network of Farrell et al. and Shin et al. The motivation for using the teaching as taught by Hefel et al. in the network of Farrell et al. and Shin et al. being that the method reduces the system waiting time, and increases the network speed.

Regarding claim 24, Hefel et al. disclosed the means for setting incrementally increasing TTL values in additional trace packets until the destination endpoint sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint (Hefel et al. see column 6, lines 20-25).

Regarding claim 33, Hefel et al. disclosed setting incrementally increasing TTL values in additional trace packets until the destination endpoint sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint (Hefel et al. see column 6, lines 20-25).

9. Claims 5, 6, 19, 25, 26, 34, 35, 40, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), as applied to claim 3 above, and further in view of Makowski et al. (Pub No.: 2004/0240431).

For claim 5, Farrell et al. and Shin et al. both did not disclose the teaching of inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) reply message.

Makowski et al. from the same or similar fields of endeavor disclosed the teaching of using a Network Time Protocol (NTP) timestamp value for the intermediate node time value; inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) reply message (see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the source and the destination. The timestamp can be generated in any well known manner such as NTP.

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the teaching as taught by Makowski et al. in the network of Farrell et al. and Shin et al. The motivation for using the teaching as taught by Makowski et al. in the network of Farrell et al. and Shin et al. being that the method enhances the packet delay.

Regarding claim 6, Makowski et al. disclosed the teaching of using bits in an unused field of the ICMP message for containing the NTP timestamp value (Makowski

et al. see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

Regarding claim 19, Makowski et al. disclosed the processor uses an Internet Control Message Protocol (ICMP) message as the expiration message and uses a Network Time Protocol (NTP) timestamp value as the time value (Makowski et al. see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the source and the destination. The timestamp can be generated in any well known manner such as NTP.

Regarding claim 25, Makowski et al. disclosed the means for using a Network Time Protocol (NTP) timestamp value for the intermediate node time value; means for inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) message (Makowski et al. see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the source and the destination. The timestamp can be generated in any well known manner such as NTP.

Regarding claim 26, Makowski et al. disclosed means for using bits in an existing field of the ICMP reply message for containing the NTP timestamp value (Makowski et al. see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

Regarding claim 34, Makowski et al. disclosed using a Network Time Protocol (NTP) timestamp value for the intermediate node time value; inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) message (Makowski et al. see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the

source and the destination. The timestamp can be generated in any well known manner such as NTP.

Regarding claim 35, Makowski et al. disclosed using bits in an unused field of the ICMP message for containing the NTP timestamp value (Makowski et al. see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

Regarding claim 40, Makowski et al. disclosed the Network Time Protocol (NTP) timestamp value is placed in an unused field of the ICMP message (Makowski et al. see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

Regarding claim 44, Makowski et al. disclosed the packet expiration notice is a Internet Control Message Protocol (ICMP) message with a Network Time Protocol (NTP) timestamp inserted therein (Makowski et al. see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

10. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), and Adhikari et al. (Pub No.: 2004/252646), as applied to claim 20 above, and further in view of Gentle (Pub No.: 2004/0223458).

For claim 41, Farrell et al., Shin et al., and Adhikari et al. all did not disclose the trace packet is part of a same media stream as the media packets containing the media payload. Gentle from the same or similar fields of endeavor teaches the trace packet is part of a same media stream as the media packets containing the media payload (Gentle paragraph 0014). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Gentle in the network of Farrell et al., Shin et al. and Adhikari et al. The motivation for using the method as taught by Gentle in the network of Farrell et al., Shin et al. and Adhikari et al. being that it provides a fast testing result.

11. Claims 45, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), and Makowski et al. (Pub No.: 2004/0240431), as applied to claim 44 above, and further in view of Adhikari et al. (Pub No.: 2004/252646).

For claim 45, Farrell et al., Shin et al. and Makowski et al. all did not teach formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same media path as corresponding RTP payload packets containing media content. Adhikari et al. from the same or similar fields of endeavor teaches formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same media path as corresponding RTP payload packets containing media content (Adhikari et al. see paragraph 0056, lines 1-16). Thus, it would have been obvious to

the person of ordinary skill in the art at the time of the invention to use the method as taught by Adhikari et al. in the network of Farrell et al. Shin et al. and Makowski et al. The motivation for using the method as taught by Adhikari et al. in the network of Farrell et al. Shin et al. and Makowski et al. being that the method accurately determines the link parameters such as the delay and the quality of service.

Regarding claim 46, Farrell et al. disclosed at a time the trace packet is sent, the existence of the destination node on the path is known by the originating endpoint while the existence of the intermediary node on the path is not known, such that the originating node receives back a communication indicating the time that a previously unknown node received the trace packet (Farrell et al. paragraph 0021). A second application packet is transmitted from source with TTL=2. The first node receives the packet and decrement the TTL, and the second node receives the packet and decrement the TTL. At this point according to the simplified example, the first two nodes in the application route are known. Thus, before the source sends out the application packet, the intermediates nodes are not known.

12. Claims 47-49, 55, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Shin et al. (Pub No.: 2007/0212065), as applied to claim 42 above, and further in view of Shay et al. (Pub No.: 2007/0153774).

For claim 47, Farrell et al. and Shin et al. both did not disclose the teaching of formatting the trace packet as a media trace packet that travels along a same media path as corresponding media payload packets containing media content.

Shay et al. from the same or similar fields of endeavor disclosed the teaching of formatting the trace packet as a media trace packet that travels along a same media path as corresponding media payload packets containing media content (Shay et al. paragraph 0100).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the teaching as taught by Shay et al. in the network of Farrell et al. and Shin et al. The motivation for using the teaching as taught by Shay et al. in the network of Farrell et al. and Shin et al. being that it increases transmission efficiency.

Regarding claim 48, Shay et al. disclosed the media trace packet is sent over the media path after the media path is reserved (Shay et al. paragraph 0100). When the audio packet is created, the audio data from channel buffer 1 is given the packet destination address for the first output audio channel 1, buffer 2 is given the address for channel 2. Thus, channel 1 is reserved for buffer 1.

Regarding claim 49, Shay et al. disclosed the media path is established with the destination endpoint (Shay et al. paragraph 0100).

Regarding claim 55, Shay et al. disclosed the trace packet is formatted as a media trace packet that travels along a same media path as corresponding media payload packets containing media content (Shay et al. paragraph 0100).

Regarding claim 56, Shay et al. disclosed the media trace packet is sent over the media path after the media path is reserved, and the media path includes the intermediary node (Shay et al. paragraph 0100). When the audio packet is created, the audio data from channel buffer 1 is given the packet destination address for the first output audio channel 1, buffer 2 is given the address for channel 2. Thus, channel 1 is reserved for buffer 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAN YUEN whose telephone number is (571)270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

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/Ricky Ngo/
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